



## Michigan's Aquatic Invasive Species Program Overview

Michigan's aquatic ecosystems are experiencing significant negative effects from aquatic invasive species (AIS) and are continually threatened by new invasions. The most widely used definition of invasive species is from the National Invasive Species Council:

*"An invasive species is defined as a species that is not native and whose introduction causes, or is likely to cause, economic or environmental harm or harm to human health."*

The introduction of AIS into the Great Lakes and inland state waters is a source of biological pollution that threatens

not only the ecology of Michigan's water resources, but also the economic and public health conditions.

Michigan has made great strides to establish a more formal, cohesive AIS program. While historically, Michigan's AIS program has received minimal funding, the state received a significant increase in funding beginning in 2010 from federal Great Lakes Restoration Initiative (GLRI) grants to address priority AIS actions.

What follows highlights recent achievements, current projects, and the



Michigan's AIS core team examining an infestation of European frog-bit.

future direction of the AIS program.

Michigan is gaining momentum and has the expertise and dedicated citizens and partners to be a frontrunner in the fight against AIS.

## Costs of Aquatic Invasive Species

AIS can disrupt natural ecosystem balance and can have negative economic effects even if prevention and control mechanisms are used. Effects are often compounded by the opportunistic nature of AIS including exploitation of food and habitat, rapid reproduction, and the lack of natural predators.

AIS can have negative economic and environmental effects on valuable water resources including:

- Degraded wildlife habitat and water quality.
- Decreased recreation and tourism.
- Negatively effected commercial fisheries.

- Decreased property values.
- Increased costs to utilities and municipalities.

When economic losses from all AIS-caused environmental effects are summed, the total effect (damage and control costs) of AIS in the Great Lakes region is estimated to be as high as \$5.7 billion per year.

## Michigan's AIS Program Highlights

### Summer 2013

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#### Special points of interest:

- Michigan has gained momentum in AIS management.
- Michigan has a newly updated AIS State Management Plan.
- Michigan has many ongoing projects that address AIS issues.
- Michigan's AIS program is in need of stable long-term funding.

### **Michigan's Updated Aquatic Invasive Species State Management Plan and Interdepartmental Aquatic Invasive Species Core Team**

Michigan's AIS State Management Plan (SMP) was recently updated in a collaborative effort by the "AIS core team." The AIS core team is coordinated by the Michigan Department of Environmental Quality's (MDEQ) Water Resources Division and is composed of staff from the MDEQ, Michigan Department of Natural Resources (MDNR), Michigan Department of Agriculture and Rural Development (MDARD), and Michigan Department of Transportation.

The updated comprehensive AIS SMP outlines new actions in addition to maintaining and enhancing existing efforts to adequately prevent and control AIS in Michigan waters, including the Great Lakes, connecting channels, rivers, streams, inland lakes, and wetlands.

The AIS SMP identifies strategic actions in categories including legislative and policy, regulation

(including compliance, enforcement, and inspection), information and education, research and monitoring, and early detection/rapid response.

The AIS SMP addresses four goals:

**Goal I:** Prevent new introductions of AIS into Michigan waters.

**Goal II:** Limit the dispersal of established populations of AIS.

**Goal III:** Develop a statewide interagency Early Detection and Rapid Response Program to address new invasions.

**Goal IV:** Manage and control AIS to minimize harmful effects.

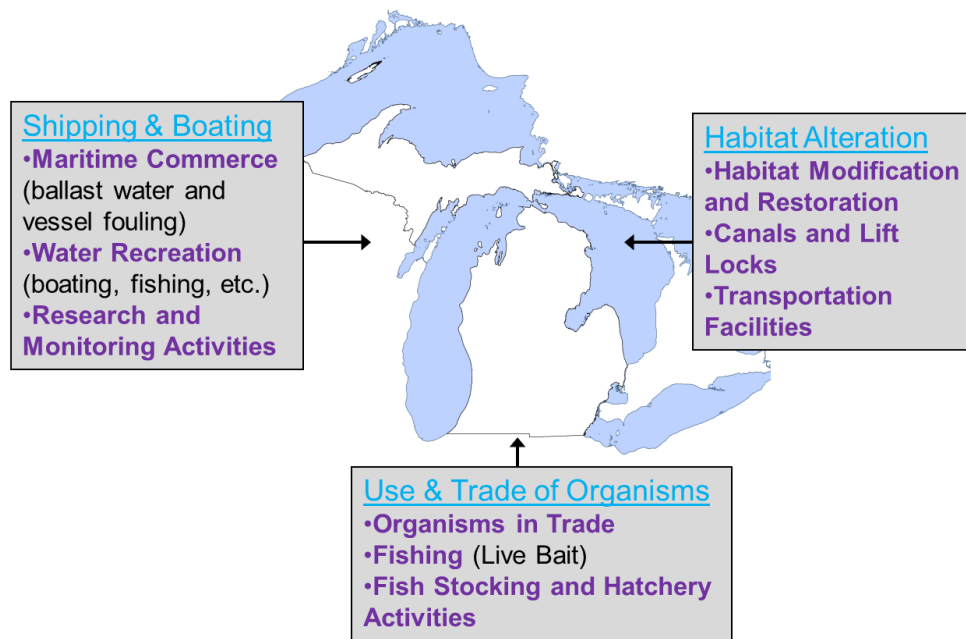
Following a public comment period and a public meeting, the AIS SMP was approved by the federal government on June 17, 2013. The AIS core team is continuing coordinated efforts to implement the AIS SMP.

Several accomplishments have been made in addition to the updated AIS SMP. Some highlights include:

- Establishing reporting protocols for priority AIS species.
- Developing an interagency AIS Rapid Response Procedure.
- Increasing public AIS awareness through education and outreach.



Matt Preisser, AIS core team member, engages the public during a partner event in Traverse City, MI.



Identification of pathways by which AIS enter and disperse throughout Michigan waters is a key concept included in the updated AIS SMP. Strategic actions are being implemented to block AIS from these pathways.

### Aquatic Invasive Species Advisory Council



Members of Michigan's AIS Advisory Council.

*The AIS Advisory Council is composed of 19 voting members appointed by the Governor, Speaker of the House, and Senate Majority leader, as well as additional nonvoting members representing a broad spectrum of interests including regulated industries, environmental groups, governmental agencies, and nongovernmental organizations.*

The AIS Advisory Council was established in December 2011 under Part 414 of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

Through this legislation, the Governor and Legislature directed the AIS Advisory Council to provide recommendations on:

- Michigan's AIS SMP.
- Ballast water regulations.
- Organisms in trade.
- Control and management of Phragmites, an invasive plant that negatively effects inland lakes, wetlands, and coastal areas.
- Financial and other resources needed to implement Michigan's AIS SMP and AIS Advisory Council recommendations.

The AIS Advisory Council convened in April 2012 to discuss the details of their legislative duties and formulate recommendations. The last meeting was held on June 28, 2013. The AIS Advisory Council's final recommendations will be submitted to Governor Rick Snyder early fall 2013.

### Aquatic Invasive Species "Watch List"

The following AIS are priority species identified by the AIS core team as being an immediate and significant threat to Michigan's natural resources. These species have never been confirmed in Michigan or have limited distribution. Early detection and timely reporting is crucial for increasing the chances of stopping an invasion and limiting negative ecological and economic effects.



Northern snakehead, a voracious predator not yet found in Michigan waters. Photo by USGS, Bugwood.org

Report these high priority species:

- Asian carp
- Northern snakehead
- Red swamp crayfish
- Parrot feather
- European Frog-bit
- Flowering Rush
- Brazilian elodea
- Hydrilla
- Water chestnut
- Water hyacinth
- Water lettuce
- Nutria



Nutria, the only mammal on the "Watch List."

Photo: Jose Reynaldo da Fonseca

For information on identification and reporting, please visit [www.michigan.gov/aquaticinvasives](http://www.michigan.gov/aquaticinvasives).



### **Asian Carp: Michigan's Role in Prevention**

Michigan is increasing efforts to prevent Asian carp from entering the Great Lakes.

The MDNR Fisheries Division and MDEQ Office of the Great Lakes are involved with the Asian Carp Regional Coordinating Committee and has participated in its bimonthly meetings.

In addition, the MDNR Fisheries Division is undertaking a variety of projects to prevent and detect Asian carp:

- Conducting a "mock exercise" in fall 2013 to simulate the actions that need to be implemented should Bighead or Silver Asian carp enter Michigan waters.
- Collecting and analyzing environmental DNA samples for the presence of Silver or Bighead carp.

- Working with state-licensed commercial fishers for reporting, removing, euthanizing, and disposing of grass carp.

As a result, Michigan will be better prepared to prevent, detect, assess, and manage Asian carp in its waters. Communication and collaboration with other states and provinces, federal governmental agencies, and universities is critical to these prevention and detection



Silver carp are one of four Asian carp species the MDNR considers a threat to Michigan and the Great Lakes.

Photo by Michigan Sea Grant

### **Michigan Increases Aquatic Invasive Species Vigilance**

MDNR Law Enforcement Division (LED) efforts to achieve the goals of the AIS SMP are to prevent introduction of prohibited species through a proactive approach. It is being accomplished through cooperative interagency law enforcement efforts, education of law enforcement agencies, user groups, business

owners, and increased inspections of businesses dealing in aquatic species.

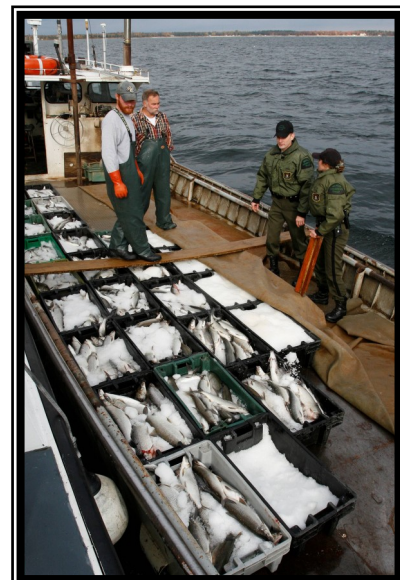
Through training multiple law enforcement agencies LED has the "24/7" ability to detect and interdict prohibited species throughout the state.

Officers continue the wholesale and retail bait dealer inspection initiative

with over 280 inspections completed in 2013.

Furthermore, LED has partnered with the U.S. Fish and Wildlife Service and the U.S. Border Patrol to conduct joint inspections at Detroit, Port Huron, and Sault Ste. Marie ports of entry.

Conservation officers continue to regularly



Conservation officers conducting inspections of commercial fishers.

### **Increasing Nursery Inspections**

Prevention of AIS via pathways associated with organisms in trade is highlighted in the AIS SMP as a priority. There are 3,200 retailers statewide that have potential to sell aquatic plants for use in water gardens and backyard pond settings. The MDARD conducted compliance monitoring

inspections beginning midyear 2012 and a total of 171 inspections were performed. Out of the 171 locations, 61 were found to carry aquatic plants. Aquatic plant species that are regulated as prohibited or restricted in Michigan were confirmed at 4 locations. The plants were subsequently restricted

from sale and destroyed. Increased information and education regarding aquatic invasive plant species was provided as part of MDARDs efforts and will continue through 2013.

Additional efforts to contact and inform the pet industry about AIS have been initiated.

### **Early Detection and Rapid Response (EDRR)**

The MDNR's Wildlife Division, in collaboration with Michigan Natural Features Inventory and Michigan State University Extension, is leading a 3-year, GLRI-funded project to:

- Develop EDRR capacity for AIS in Michigan
- Inventory and control several high threat aquatic plant species, including Brazilian elodea, water lettuce,

water hyacinth, parrot-feather, flowering rush, and European frog-bit.

This multistage project includes a framework of surveillance, verification, assessment, planning and communication, control, monitoring, and restoration.

EDRR project staff collaborates with many partners including: Midwest Invasive Species

Information Network, Michigan Aquatic Managers Association, Michigan Inland Lakes Partnership, and Michigan Natural Shoreline Partnership.

In 2014, the Wildlife Division will build off of these efforts and survey additional coastal wetlands, lakes, and streams for high threat plant species.



EDRR project employees pulling out a massive mat of European frog-bit during a spring 2013 site visit. Management efforts for this invasive plant at key locations are planned for fall 2013.

### **Aquatic Invasive Species of the Week**

In April 2013 the MDEQ's WRD began distributing a weekly series of brief informational sheets focusing on a variety of aquatic and wetland invasive species. These sheets include: species characteristics, ecological effects, and current distribution. These weekly postings are intended as a

quick reference on the many different kinds of AIS currently in Michigan or threaten to invade our waters.

The AIS of the Week began as an informational sheet for WRD biologists and quickly grew into an educational and outreach tool for the public.

The AIS of the Week is posted on the WRD AIS Web site and distribution is encouraged. In addition, AIS of the Week is "tweeted" on the MDEQ's Twitter account.

*"Thanks; I really like these. I'm learning something new each time you send them."*

AIS of the Week feedback from Christine Alexander, Chief, Lakes Erie & Huron Permits Unit Chief. Water Resources Division, MDEQ.

### **Increasing Public Education and Outreach**

The AIS Core Team recently partnered with Minnesota and Wisconsin Departments of Natural Resources to create a tri-state public service announcement (PSA) that focuses on AIS prevention. Michigan locations were filmed in July 2013 and

included the Mackinac Bridge, Petoskey State Park, and Harbor Springs. The PSA is scheduled to air in Michigan, Wisconsin, and Minnesota in 2014.

To further expand on AIS education and outreach activities, the AIS Core

Team is developing an informational booth to be displayed at various events throughout the state. Messaging will focus on national campaigns like Stop Aquatic Hitchhikers! and Don't Dump Your Bait, as well as Michigan-specific information.



Filming the tri-state public service announcement near the Mackinac Bridge.

## **Funding Michigan's Aquatic Invasive Species Program**

Historically, AIS prevention and control activities in Michigan have been limited or sporadic largely due to inadequate funding. Beginning in late 2010, the State of Michigan received a significant increase in funding from a federal GLRI grant to address priority AIS actions. This new funding initiated a surge in AIS related activities by state agencies; however, this grant funding is short-term, and a reliable long-term funding source is needed.

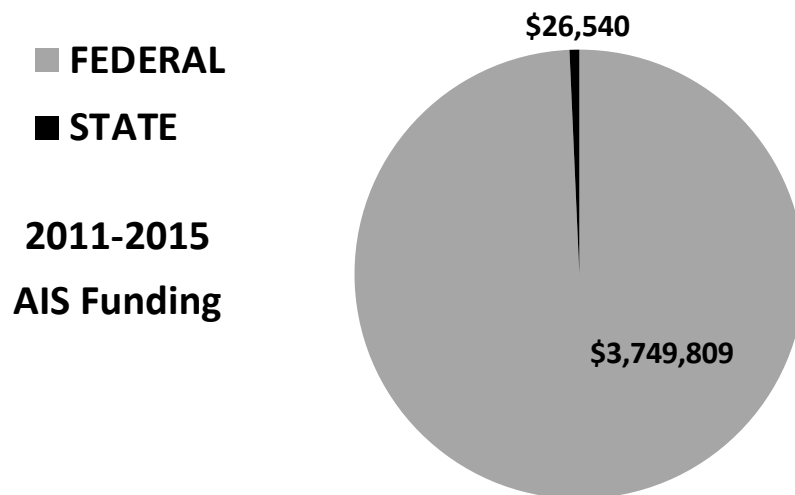
The AIS Advisory Council reviewed Michigan's current AIS program and funding, as well as AIS programs in other states. The AIS Advisory Council recognizes that Michigan spends far less to manage AIS compared to key neighboring states. The AIS Advisory Council's recommendations submitted this fall will include continued support for AIS SMP implementation and the AIS Core Team.

*The AIS Advisory Council recognizes that Michigan spends far less to manage AIS compared to key neighboring states.*

*To carry out these tasks and to continue the AIS program beyond short-term federal grant funds, the AIS Advisory Council recommends state funding at \$4.1 million to \$5.9 million annually.*

## **CURRENT AIS FUNDING INFORMATION**

**Michigan's funding sources for the AIS program and the amounts it has received. Federal dollars received are in grey. State matched funds are in black. Currently, Michigan's AIS program is 99% funded by temporary federal grants.**



For more information on Michigan's Aquatic Invasive Species program, please contact: Sarah LeSage, AIS program coordinator at 517-284-5472 or [lesages@michigan.gov](mailto:lesages@michigan.gov). You can also visit the Michigan Department of Environmental Quality's AIS Web site at [www.michigan.gov/aquaticinvasives](http://www.michigan.gov/aquaticinvasives) or the Michigan Department of Natural Resources' Invasive Species Web site: [www.michigan.gov/invasivespecies](http://www.michigan.gov/invasivespecies).